



PROJECT SUMMARY REPORT - 2014 YOUNG SUND CAMPAIGN

Subproject: Variability in glacier melting rates, sea ice and hydrography in the Young Sound region, East Greenland

Actual field dates: July-August 2014

Field site: Young Sund

Summary:

In a pilot study a few sediment cores were taken in summer 2013. These showed that it is possible to obtain good quality sediment series using Rumohr lot coring equipment. Additional sediment cores were collected during the field work in 2014. These cores are from a varying distance from the glacier front. Field work was carried out by Egon Randa Frandsen.

In summer 2014 the plan was to collect sediment cores from a transect through Young sound to study the past hydrographical changes and the interaction between glacial meltwater outflow and fjord hydrography. Unfortunately, there was not much time for this project and technical difficulties also meant that fewer cores than originally planned could be collected.

Rumohr lot cores were obtained from following sites. Cores from 2014:

- Tyro-08, 2 kerner - N74° 26.382' W21° 41.983'
- YS-3.14, 2 kerner - N74° 25.274' W20° 30.445'

Two further sites had already been collected in 2013. Cores collected 2013:

- Tyro 5, 125 m - N74° 30.147' W21° 53.282'
- Young Sound 163 m - N74° 18.580' W20° 18.000' (2 cores)

The cores will be studied for their sediment composition, where sediment structures and grain size combined with trace elements (XRF core scanning) will show ice sheet melting rates, with a presumed largest glacier influx close to the glacier front and decrease out through the fjord. Further analyses will include diatoms which will also illustrate variability in meltwater and temperature of the surface waters as well as benthic foraminifera that may be used to test for influx of ocean water as bottom water into the fjord. The temperature of these bottom waters are expected to have a major impact on glacier melting rates. This main part of the project will be carried out by national and international collaborators over the coming few years, within the context of the Arctic Research Centre at Aarhus University and the Arctic Science Partnership.

Photos:

Fig.1: Sediment core from Young Sound collected 2013. Credit: Egon Randa Frandsen

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Acknowledgements:

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Figure 1